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PANAMA CANAL.

LETTER FROM THE HON. HENRY WHEATON,
UNITED STATES MINISTER AT BERLIN.

MY DEAR SIR: Two great revolutions in the commercial intercourse of the globe appear to be impending, which cannot fail to be attended with the most important consequences to the progress of civilization. These are—

1st. The reopening the ancient route between Europe and the East Indies, by Egypt and the Red Sea, which must inevitably result from the improvements in steam navigation and the founding a new Mahomedan dynasty on the banks of the Nile.

2d. The opening a new route from Europe and the United States to the East Indies and the western coasts of America, by an artificial communication between the Atlantic and Pacific oceans, across the Isthmus which connects the two continents of North and South America.

The vast importance of the latter to the world in general cannot admit of a question; and its importance to the United States is enhanced by the increased facilities which the construction of a canal such as that originally attempted to be established by the Ptolemies across the Isthmus of Suez must give to the commercial intercourse of Europe and Asia. From the earliest ages of human history the commerce of India has been regarded as the perennial source of wealth and surest basis of maritime power. Venice and Genoa carried it on by Egypt and the Black Sea. When Vasco de Gama discovered the new route by the Cape of Good Hope, these flourishing commercial Republics fell from their high and palmy state of prosperity. The most strenuous efforts are now making to reopen these old channels of trade, and discover new routes into the heart of Asia. Lines of steamers are established from Marseilles and Trieste to Alexandria and Beyrout. Other lines descend the Danube, now connected with the Rhine by the Ludwig canal, and from thence sail across the Black Sea to Trebizond. The rulers of the Austrian Empire are not slumbering, as many suppose, but are deeply considering how its vast natural resources may be best developed by the application of steam power by land and by sea. When the railroad communication shall have been completed from Vienna to Trieste, the Mediterranean, the Black Sea, the Baltic, and the German ocean will be completely knit together; and Central and Northern Europe will have the choice of three routes to the East—by the Rhine, the Danube, and the Black Sea; by the Euphrates and the Persian Gulf; and by the

Rhine, the Danube, the Adriatic, the Nile, and the Red Sea. Great Britain, France, Russia, and Germany are all striving to outstrip each other in this race. Europe seeks to avoid the lengthened route round the Cape of Good Hope by connecting the Mediterranean with the Red Sea and the Persian Gulf. We must seek to avoid the lengthened route round Capè Horn, by connecting the Caribbean Sea with the Pacific ocean. The French engineers, who planned the canal across the Isthmus of Suez during Bonaparte's expedition to Egypt, calculated that it would save one-third the distance and one-fifth the time in navigating from the southern ports of France to the East Indies. The United States would save at least 10,000 miles of distance and a proportional amount of time in their navigation to the northwest coast of America and to China, by substituting the route across the Isthmus which connects the two American continents for that round Cape Horn. The opening a water communication from one sea to the other, somewhere between the Gulf of Mexico and the Gulf of Darien, thus becomes of vital importance to us. Our national interests, commercial, political, and social, are all deeply involved in the question. The necessity of competing with other rival nations for the new trade now opening with the Celestial Empire, from which the veil of mystery has been rudely torn; of extending our established commerce with the western coasts of the two American continents and the Polynesian Archipelago; of giving increased facilities to the whale fishery, and of establishing a more direct communication with our territories beyond the Rocky Mountains and our naval stations in the Pacific ocean—all these circumstances combine to augment the importance and urgency of this great question. A new and increased interest has been given to the subject by the measures adopted at the last session of Congress for establishing diplomatic intercourse with China and the independent isles of the Pacific; by the vast schemes of colonization already in a train of execution by Great Britain and Australasia and New Zealand, and by the recent discussion in the French Chambers upon those planned by France. It is not meant that our Government should seek exclusive advantages for itself or its citizens. Such great artificial communications between the continent of both hemispheres ought to be free, like the natural passages of the straits, the sounds, the gulfs, and the great rivers which wash the shores of different countries; and for this purpose these works ought to be considered as held in trust by the nation within whose territory they may be constructed for the common use of all mankind. There is surely enough of the spirit of mutual concession, of respect for the public law of the civilized world, and of political wisdom among

the maritime powers principally interested, to devise regulations by which the passage, once marked out and rendered practicable by construction of artificial works, may be neutralized and enjoyed in common by all nations, upon the payment of moderate and reasonable tolls, according to the principles laid down by the Congress of Vienna in respect to the navigation of the great European rivers.

The illustrious philosopher to whom we are so much indebted for our knowledge of the geography of the American continents, in speaking more than five and twenty years ago on this subject, of which he has never since lost sight, uses the following emphatic expressions:

"When a canal of communication shall unite the two oceans, the productions of Nootka Sound and of China will be brought nearer to Europe and the United States by more than two thousand leagues. Then, and then only, will mighty changes be effected in the political state of Oriental Asia; for this narrow tongue of land, against which the waves of the Atlantic have so long beat in vain, has been for ages the bulwark of the independence of China and Japan."*

Such, then, being the vast magnitude of the urgency of this question, I have thought that a concise summary of the present state of our information respecting it, so far as it may be derived from sources accessible here, might not be without interest to the members of the Institute at the present moment, and might perhaps lead to further more successful inquiries in other directions.

It is well known with what an intense and painful anxiety the great Columbus sought to find a passage through the vast continent discovered by him to the land of Cathay, which was the original object of his first voyage of discovery, and was never relinquished as his ultimate aim. In 1523 the Emperor Charles V, in a letter written from Valladolid to Cortez, enjoined upon him carefully to search on the eastern and western shores of West Spain for "the secret of a strait," (*el secreto del estrecho*), of which Cortez himself had spoken, in one of his previous despatches, to the Emperor, and which, it was supposed, would shorten by two-thirds the route from Cadiz to the East Indies, then called the "land of spices." The Conqueror of Mexico, in his answer to the Emperor, speaks with the most glowing enthusiasm of the probability of such a discovery, "which," says he, "would render your majesty master of so many kingdoms that you might consider yourself master of the world." It was in the attempt to find a shorter route to the East Indies than that by the Cape of Good Hope that Magellan discovered the passage round Cape Horn and through the straits which bear his name, whilst Cortez spent the remainder of his restless life in vain endeavors to the same end. After the great things he had achieved in the conquest of Mexico, the accidental discovery of the Gulf and Peninsula of California could hardly be considered as an adequate compensation for the toils he endured in these maritime expeditions.

* Humboldt, *Essai Politique, sur la Nouvelle Espagne*, tome 1, p. 242. Second edition. The first edition was published in 1808.

Since it has been completely ascertained that there is no natural passage by sea through the continents to be found from the Arctic Sea to the straits of Magellan, various points have been indicated by which an artificial communication might be opened between the two oceans. Five of these points are enumerated by the illustrious Humboldt, as follows:

1. The Isthmus of Tehuantepec, between the sources of the Rio Chimalapa, which falls into the Pacific, and the Rio del Passo, which falls into the Rio Huasacualco, which last falls into the Atlantic.

2. The Isthmus of Nicaragua, between the Lake of Nicaragua, forming the source of the Rio Juan, which falls into the Atlantic, and the Gulf of Papagayo, on the Pacific.

3. The Isthmus of Panama.

4. The Isthmus of Darien, or Cupica.

5. The Isthmus between the river Atrato, which falls into the Atlantic, and the Rio Chocco, which falls into the Pacific.*

1. The Isthmus of Tehuantepec is formed, between the 15th and 18th degrees of north latitude, by the Rio Chimalapa flowing into the Gulf of Tehuantepec on the one side, and the Rio del Passo, which afterwards becomes the Rio Huasacualco, or Goasacualco, into the Gulf of Mexico on the other. It has been pretended that these rivers are sometimes swollen by the rains so as to admit of a passage for Indian batteaus from sea to sea, like those temporary communications which are sometimes formed between the waters of the Mississippi and those of Lakes Erie and Michigan. Be this as it may, it is certain that a commercial communication has long been carried on through this valley across the Isthmus, and especially at those periods of war when the trade of Vera Cruz was interrupted by military and naval operations. The mouth of the Rio Huasacualco forms the best harbor known to exist at the mouth of any river on the Gulf of Mexico; it being well known that Pensacola is situated on a bay. This river has eighteen or twenty feet of water on the bar at its mouth. It is navigable for eight leagues to the Passo de la Fabrica, where it is joined by the Rio del Passo, and where the cargoes are taken out and transported in boats fifteen leagues higher up, to the Passo de la Puerta, at which place the river ceases to be navigable with boats. From this place the goods are transported by land to the Bay of Tehuantepec, on the Pacific.

In pursuance of his ardent desire to find "the secret of a strait" through the American continent into the Pacific ocean, Cortez demanded, in 1520, from Montezuma, information concerning the eastern coasts of the Empire of Anahuac. The Mexican monarch answered that he was not himself acquainted with those parts, but that he would cause a drawing to be made of the coast, with its bays and rivers, and would furnish the necessary guides to accompany the Spaniards who might be sent to explore the country. The next day the drawing was accordingly brought to Cortez, upon which his pilots recognized the mouth of a great river, which they supposed to be

* Humboldt, *voyage, &c.*, tom. ix, p. 209. *Essai sur la Nouvelle Espagne*, tom. i, pp. 209, 339.

the one they had perceived on the coast, on their first arrival, near the mountains of Sanmyn, in the province of Mazamalco. Guided by these indications, Cortez sent, in 1520, a small detachment, under the orders of Diego Ordaz, to reconnoitre this river, which proved to be the Huasacualco, or, as Cortez writes the Mexican word, *Quacalco*. The pilots found only two and a half fathoms of water on the bar at its mouth, but on ascending the river, the depth of water increased to five or six fathoms. After the taking of Mexico, the conquest of the province of Tehuantepec was accomplished by Gonzalo de Sandoval in 1521; and although it had been ascertained by the pilots that no strait existed from the coast of Nicaragua to the Isthmus of Tehuantepec, this Isthmus still continued to be regarded as of great importance, on account of the proximity of the two seas, and the river Huasacualco, affording the Spanish *conquistadores* the facility of transporting from Vera Cruz to the coasts of the Pacific ocean the necessary materials for ship building. The expedition of Hernando de Grijalva, which sailed for California in 1534, was equipped at Tehuantepec, and the vessels in which Cortez himself sailed from Chametla in 1535, for the same destination, were also constructed at the mouth of the Rio Chimalapa, with materials brought from the Gulf of Mexico by the Rio Huasacualco.

From the latter part of the sixteenth century the port of Tehuantepec, which is, in fact, only an open roadstead, was but little frequented. Acapulco became the seat of commerce between the Spanish American colonies and the Philippine Islands; and the galleons used in this trade were built either at San Blas or Manilla. The sea is found to be fast retreating from the coast of Tehuantepec, the anchorage becomes every year more unsafe, and the bar of sand at the mouth of the Rio Chimalapa is constantly augmenting.

The first exploration of this route for a canal communication between the Gulf of Mexico and the South Sea was occasioned by the accidental discovery, in 1771, of some pieces of bronze cannon in the Castle of San Juan d'Uloa, which it was ascertained by their marks had been cast at Manilla. As it was nearly certain that these pieces of artillery could not have been transported to the coast of the Gulf of Mexico, by the way of Acapulco, on account of the difficulties of the overland communication over the great Cordilleras of New Spain, nor by the way of Cape Horn or the Cape of Good Hope, the trade between Vera Cruz and the Philippine islands not being carried on by either of those routes, the conclusion was that they must have found their way by the Isthmus of Tehuantepec. This conjecture was verified by the examination of ancient records and the tradition existing among the inhabitants of the Isthmus, that these cannon had been transported from the Pacific by the Rio Chimalapa and the Rio Huasacualco. This fact, thus ascertained, induced the Viceroy of Mexico, Don Antonio Bucanelli, to give orders to two engineers, Don Antonio Cramer and Don Miguel del Correl, to examine the Isthmus, with a view of ascertaining whether

any natural communication already existed by means of rivers whose branches might interlock with each other, and at the same time to determine the practicability of cutting an artificial canal between the Chimalapa and the Huasacualco. Baron Humboldt prepared his map of the Isthmus of Tehuantepec from the report of these engineers, who found that there was no river which discharged its waters at the same time into the Atlantic and the Pacific; that the river Huasacualco did not take its rise, as the Viceroy had been assured, near the city of Tehuantepec; but that, in ascending that river above the falls, even to the ancient *desembarcadero* of Malpasso, the coasts of the Pacific were still twenty-six leagues distant. They observed that a chain of mountains of considerable height divides the waters which flow into the two seas. This small *ordillera* stretches from east to west from the Cerros de los Mixes, then inhabited by savages, towards the elevated plain of Portillo de Petapa. But the engineer, Cramer, affirms that to the south of the village of Santa Mareda de Chimalapa the mountains form, not a continuous Cordillera, but a group, and that there exists a transversal valley through which a canal might be constructed, without locks or inclined planes, to communicate between the two seas, at a distance of not more than six leagues in length.*

In the year 1814, the Spanish Cortes, on the motion of Don Lucas Alaman, afterwards Mexican Minister of Foreign Affairs, passed a decree for the construction of such a canal. The subsequent independence of the Spanish American Colonies prevented any measures being taken in execution of this decree, but the Government of the United States of Mexico, under the Presidency of General Guadalupe Victoria, appointed a board of commissioners to ascertain the practicability of constructing a canal from the one river to the other, and of removing the obstructions which exist to the navigation of the two rivers by vessels of considerable burden. The result of their investigations showed that the want of a good harbor on the coast of the Pacific, at or near the mouth of the Chimalapa, with the great number of rapids in the rivers winding through an isthmus of thirty-eight leagues in breadth, and the intermediate elevations to be surmounted, rendered impracticable the execution of a ship canal at this point, although the commerce already carried on across the Isthmus might doubtless be greatly facilitated and extended by means of good roads. The Mexican Congress therefore determined on the construction of a new road, to connect the upper waters of the Rio Huasacualco with the lagoons to the east of Tehuantepec. It is more than probable that the subsequent unsettled state of affairs, both internal and external, of the Mexican Republic, has prevented any thing being done towards carrying this resolution into effect.

2. The great lake of Nicaragua communicates to the east with the Caribbean Sea by the river San Juan del Norte. An artificial communication may be opened between the Lake and the Pacific ocean, by cutting a canal through the Isthmus which separates them.

* Humboldt, *Essai Politique*, tome 1, p. 209. Tome iv, pp. 49, 54.

That distinguished Prussian geographer Berghaus, in a memoir published in 1838, and intended to illustrate his beautiful maps of Central America, has traced with the hand of a master the great physical features of this region of the globe.* He refutes the notion constantly repeated in the geographical treatises and maps in ordinary use, according to which the whole extent of this narrowest part of the continent is traversed by a continuous unbroken chain of mountains, without transversal valleys, which bars the passage across the isthmus. This mistaken opinion which had been already contested by Humboldt, doubtless originated from the succession of volcanic mountains, which rises along the flat shores of the Pacific, and from which it has been inferred that they stand, as in Chili, Bolivia, and Quito, on the ridge of the Cordillera. In Guatemala this is not the case. The coast of the South Sea forms here an alluvial plain of various breadth, from which the volcanic hills rise in insulated groups detached from the back ground of mountains. Such is the character of the volcanic hills between the Lake of Nicaragua and the Pacific ocean.

Instead of this imaginary continuous Cordillera, the mountains of Central America are divided by Berghaus into three distinct systems or groups. The first is the group of Costa Rica; the second that of Nicaragua and Honduras; and the third that of Guatemala.

The first of these is divided from the second by the great transversal valley, of which the Lake of Nicaragua forms the middle point, and which extends from sea to sea. The second is divided from the third by the *Llanura de Comayagua*, another wide transversal valley, which traverses the continent in the meridian of the Gulf of Gonchagua, in a direction from northeast to south. This fact, which Humboldt had conjectured in 1825, was verified by Don Juan Galindo, ten years later. Through this plain flows the Rio Jagua towards the N. N. E., into the Caribbean Sea, and the Rio Sirano, or San Miguel, into the Gulf of Conchagua on the Pacific. Both these streams are navigable by batteaus.

On the Isthmus of Panama, between the river Chagres and the coast of the Pacific, and westwardly, from the mouth of the Chagres along the shores of the Atlantic, nothing is to be seen rising above the plain but hills of moderate elevation. But when the traveller reaches the meridian of the Rio Coclet, about seven leagues from the coast of the Caribbean Sea, he encounters the lofty mountains known to the mariner by the name of the Cordillera de Veragua. This group may be descried in clear weather at the distance of thirty-six leagues at sea. Humboldt conjectures its highest point of elevation to be about one thousand four hundred toises. Among these mountains takes its rise the Rio Belem, at the mouth of which Columbus established, in 1502, the first European colony ever planted on the American continent. Upon the parallel of 8 deg. 25 min., north latitude begin the secondary highlands of Costa Rica, which form an elevation of about eight hundred toises, and

gradually decline in successive terraces, girt with volcanoes, until they sink down to the level of the Lake of Nicaragua.

The third group of mountains described by Berghaus is that of Guatemala, which fills the whole western part of Central America and the eastern States of Mexico to the Isthmus of Tehuantepec, before noticed. The whole coast of the Bay of Honduras, from the meridian of the Island of Utila to the parallel of the Balize, is girt with lofty mountains. Captain Owen determined the height of the Congrehoy peak to be one thousand one hundred and seventy toises, and that of Omoa one thousand and ninety-five toises above the level of the sea. The Balize river bursts forth from these mountains in foaming cataracts. In one place the stream is arched over by a natural bridge, through which it rushes over a waterfall of from forty to fifty feet high. Many other rivers along the coast are adorned with similar natural grottoes, through which they pass on their way to the sea. Along the coast run the two ridges, one of which is called the Pine Ridge, and other the Cahoun Ridge. The first forms a vast, boundless, natural park of pines, shooting from the soft verdant turf. The second is crowned with a wood of gigantic forest trees of various descriptions, besides the mahogany, (*swietenia mahagani*), which form the principal wealth of this region. Through this wilderness a single path leads up a narrow valley to the Lake of Peten on the northern prolongation of the table-land of Guatemala. The Rio Montagna forms another deep sunken valley, which conducts first to the old and then to the new city of Guatemala, which last, according to Thompson, stands only 1,800 feet above the level of the sea. But the cities of Guatemala do not stand on the highest point of land. Still more lofty are the mountains of Chemaltemanfio, with their magnificent scenery; and higher still the mountain plains of Sosolo, Quesaltenango, and Totonicapau. On these plains wheat and bread stuffs are cultivated in perfection. Here is the highest point of elevation, called by the natives themselves "the highlands." Here, too, is the central region of volcanic fires. The two ranges of these volcanic mountains, called the *volcanos de los Amilpas*, run along the very edge of the table-land. According to Captain Basil Hall's observations, these mountains rise about 2,000 toises above the level of the sea. As in the east towards Honduras, so in the west towards the Gulf of Tehuantepec, the plain is girt with a chain of mountains, from which the Rio Umusiata bursts forth, and running north, after passing a single cataract, becomes navigable quite into the Gulf of Mexico.

To return to the Lake of Nicaragua. The isthmus which divides that lake from the port of San Juan del Sud, on the Pacific ocean, is said to be about seventeen English miles in breadth. According to the observations made by the Spanish Engineer Galisteo, in 1781, the level of the Nicaragua lake is one hundred and thirty-four feet above the Pacific ocean.* The elevation of this basin above the neighboring seas is a fact so well known that it has been

* Berghaus, *Annalen der Erd Naelker and Staatenkunde*, 3te Reihe, B'd V. s. 221.

* Humboldt, *voyage, &c.*, tom. xi., p. 120. Note.

considered by some as an invincible obstacle to the execution of a ship-canal at this place. It has been apprehended that it might occasion a sudden rushing of the waters to the westward, or a diminution of the waters in the Rio San Juan, the navigation of which is impeded by several rapids. Even supposing a considerable permanent difference between the two seas, which, as it will be hereafter shown, does not exist, the art of the engineer would easily apply a remedy for the apprehended danger of inundation, by means of locks, whilst the lake would serve as a reservoir to supply both the canal and the river.

A series of tables is given in Thompson's Travels in Guatamela, of levels, repeated at intervals not exceeding one hundred yards apart, between the southern shore of Lake Nicaragua and the Gulf of Papagayo, from which the author infers the elevation of the surface of the lake above the Pacific ocean to be one hundred and thirty-three feet eleven and a-half inches; and the greatest height of any part of the intervening land to be only nineteen feet one inch above the lake. But Mr. Mercer has shown, in his report made to the House of Representatives in 1839, that Thompson mistakes the true import of the tables, in substituting the comparative elevation of two contiguous stations on the long series of levels for the highest above the lake. The difficulties attending the construction of a continuous canal on this route are confined to the lake, for about six miles of which the ground rises to an elevation exceeding sixty feet, for two miles of the six it averages one hundred and thirty-five feet, and for one-third of a mile one hundred and fifty. If the level of the lake be assumed for the summit of a canal, there must be added to the elevation abovementioned an excavation of the depth of the channel for navigation.

Besides this communication from Lake Nicaragua to the Gulf of Papagayo, there is a possible choice of two others: 1st. By the adjoining Lake Leon or Montagua, by the Rio de Tosta which flows from the volcanic mountain of Telica.* 2d. From Lake Nicaragua to the Gulf of Nicoya or Caldera.†

There seems to be no doubt of Lake Nicaragua being sufficiently deep for ship navigation. The river San Juan, which has its source in the lake, runs southeasterly and discharges itself into the Caribbean sea in the latitude of 10 deg. 45 min. north, and 86 deg. west longitude from Paris. The bar at the mouth of the river has not more than twelve feet of water on it, and it is stated by Mr. Robinson that one of the passages would admit a vessel drawing twenty-five feet. After the bar is passed, there is excellent and safe anchorage in four and six fathoms. The accounts as to the difficulties attending the navigation of the Rio San Juan, from rapids and sand bars, are somewhat contradictory; but it seems probable that these obstacles might be overcome by artificial works, so as to render that river navigable for large vessels in its whole course.

Soon after the Independence of Central America

* See some observations on this route by Chevalier Frierichsthal in the journal of the Geographical Society of London, vol. ix, part i, p. 79.

† And not from the Lake of Leon to the Gulf of Nicoya, as Mr. Robinson erroneously asserts.

was declared in 1824, negotiations were entered into between the Republic and several associations in the United States and England for the construction of a canal from Lake Nicaragua to the South Sea, and for improving the navigation of the Rio San Juan. These negotiations finally terminated in a charter granted in 1826, for this purpose, by the Federal Congress of the Republic to Mr. Palmer, of New York, and his associates. This contract not having been carried into effect, another grant was made for the same purpose in 1830, to a Dutch company, under the patronage of the King of Holland. The events consequent upon the Belgic revolution, which occurred in the same year, also prevented any measures being taken to carry into execution this arrangement.

3. The possibility of opening a canal communication between the two oceans across the Isthmus of Panama has occupied the minds of men almost ever since it was traversed for the first time, and the Pacific Ocean was discovered by the intrepid and adventurous Vasco Nunez de Balboa. During the three centuries which have elapsed since this memorable epoch, neither the relative height of the two oceans, nor the elevation of the highlands between them, nor the geographical points of the isthmus had been, until very recently, determined with any approach to mathematical accuracy. From very ancient times, the prevailing opinion of mankind had assumed the hypothesis that of two adjacent seas, separated by a narrow isthmus, the level of one must necessarily be higher than that of the other. This supposition of the ancient geographers has been found correct as to the elevation of the Red Sea above that of the Mediterranean. The Pacific Ocean at the Isthmus of Panama was also formerly supposed to be considerably higher than the Atlantic. This opinion was long since contested by Baron von Humboldt, and his conclusions have been recently confirmed by the actual observations of Mr. Lloyd, made with the greatest accuracy and care in the years 1828 and 1829, by order of Gen. Bolivar.

As before noticed, it has been hitherto generally supposed that the mountains which traverse the Isthmus of Panama form a continuation of the Cordillera of the Andes, or a connecting link between that and the great chain of the Mexican and Rocky Mountains. Mr. Lloyd has also confirmed the ancient theory of Humboldt in this respect, and shown that the continuity of the chain is twice broken in its passage throughout the isthmus connecting the two continents. It ceases in Nicaragua, but again rears its lofty summits in the province of Veragua (as we have seen from Berghaus) where it is crowned with an extensive plain called La Mesa. In the eastern part of this province it breaks into detached mountains of considerable height, and of the most abrupt and rugged formation. Thence proceeding still to the eastward, innumerable conical hills lift their heads three or four hundred feet high, with their bases surrounded by level plains and savannahs. Finally, about Chagres, on the Atlantic side, and the Bay of Chorrera on the Pacific, these hills also disappear, and the country for a few miles in extent sinks into low and level plains. Again these con-

cal hills rise, and becoming collected, form a small Cordillera, running from about Porto Bello to the Bay of Mandingo, where occurs the second break in the continuity of the mountain chain.*

The Rio Chagres, which falls into the Caribbean Sea to the west of Porto Bello, and at the mouth of which lies the town of Chagres, though obstructed in its ascent by sand banks and rapids, is navigable for vessels drawing from five to six feet of water, to Cruces, about sixteen English miles in a direct line from Panama. From the mouth of the river to its junction with the Rio Trinidad, a distance of twenty-four miles, the Chagres has a depth of twenty-two to thirty feet, unless on some few spots where only sixteen are found, which, however, have deep water close to them. This depth too, is not a channel, but extends to the whole width of the river, which is from two hundred to two hundred and eighty feet wide. But this river is subject to the great inconvenience that vessels drawing more than twelve feet of water cannot enter the mouth of the river at the port of Chagres, on account of a stratum of slaty limestone, which runs at high water at a depth of fifteen feet from a point on the main land, near the castle of San Lorenzo, to some rocks in the middle of the entrance of the harbor; and which, together with a lee current setting on the southern shore, particularly in the rainy season, renders the entrance extremely difficult and dangerous. This difficulty may be obviated by substituting for the harbor of Chagres, the Bay of Lemon, or Navy Bay, which lies to the eastward of the town, and the coves of which afford excellent and secure anchorage in its present state, and the entire bay is capable of being rendered one of the most safe and commodious harbors in the world. This bay is approached so near by the river Chagres that it may easily be united with it by a canal something less than three English miles in length, over a flat country.†

The Spanish engineers who had proposed to the Court of Madrid, as early as 1528, the establishment of a water communication across the isthmus by the river Chagres, intended to commence the artificial canal at Cruces, and conduct it from thence to Panama, over a country with the difficulties of which they do not appear to have made themselves sufficiently acquainted. The Rio Chagres is joined considerably below Cruces by another river called the Trinidad, coming from the south, which some consider as the main stream, and whose head waters approached very near to the Bay of Chorrera, lying to the west of Panama on the Pacific. The eastern part of the isthmus, on the line from Panama to the mouth of the Chagres, is narrower, but the country is much more broken and elevated in that direction. Mr. Lloyd therefore concludes that the valley of the Rio Trinidad affords the most favorable route for a canal, which would unite the Lower Chagres with the waters which fall into the Bay of Chorrera. But his observations were principally directed to the object of opening a communication across the isthmus by

means of railroads, and incidentally to determine the difference of levels between the two oceans. For this purpose he began his operations by taking a series of levellings between the Panama and the Upper Chagres, on the old road to Porto Bello. At the point where the road crosses the river, twenty-two and three-quarter miles distant from Panama, he found the elevation to be 169.84 feet above the level of high water mark in the Pacific, the greatest intermediate height passed over being 633.32 feet. He then descended the river to Cruces, and found in his route a total fall in the river of 114.60 feet, being only 37.96 feet above the Pacific. From this place the river gradually descends to the level of the Atlantic.

The results of the observations made by Mr. Lloyd show, first, that the mean height of the Pacific at the port of Panama is 3.52 feet higher than that of the Atlantic at the mouth of the river Chagres. Secondly, at high water, the time of which is nearly the same on both sides of the isthmus, the Pacific is raised at mean tides 10.31 feet, and the Atlantic fifty-eight hundredths of a foot above their respective mean levels. The Pacific is therefore the highest at these periods. Thirdly, at low water mark, both seas are the same quantities below their respective levels. Therefore, at such times the Pacific is lower than the Atlantic.

In every twelve hours, therefore, and commencing with high tides, the level of the Pacific is several feet higher than that of the Atlantic; it becomes then of the same height, and at low tide is several feet lower; again, as the tide rises, the two seas are of one the height, and finally, at high tide the Pacific is again same number of feet above the Atlantic as at first.*

A separate plan of the river Chagres, from its mouth to the point where it was intersected by the levellings, was communicated by Mr. Lloyd to the Royal Society of London; but this plan has not been published, and the plan of the river contained in the general map of the isthmus does not give the soundings. The two lines for railroads exploded by that engineer, extending from the junction of the Trinidad with the Chagres, the one to Panama, and the other (much shorter) to the Bay of Chorrera, are marked on the published map; but the series of levellings in this direction is not given. The country intersected by these lines is interspersed with savannahs, and presents along the banks of the Trinidad a wide vale of flat and swampy land, with occasional detached conical hills and small streams, most of which fall into the Chagres. The number of these streams to be crossed, which are swollen in the rainy season, would present a serious impediment to the construction of a permanent railroad; but would in the same degree favor that of a canal in this direction.

The Government of the United States, under its different Administrations since the independence of Spanish America, has never ceased to take a deep interest in the question of a canal communication between the two oceans. In the letter of instructions given in 1826 by Mr. Clay, then Secretary of State,

* Journal of the Royal Geographical Society of London, 1830-31, vol. i, p. 70.

† Lloyd, Philosophical Transactions, 1830, pt. i, p. 67.

* Philosophical Transactions, 1830, part 1, pp. 60, 63.

to our plenipotentiaries appointed to attend the Congress of Panama, reference is had to a correspondence on this subject between him and the minister of Central America, and it was stated that if the work should ever be executed so as to admit of the passage of sea vessels, the benefits of it ought not to be exclusively appropriated to any one nation, but should be extended to all parts of the globe, upon the payment of a just compensation or reasonable tolls. Our ministers were consequently directed to state to the ministers of the other American powers, that the Government of the United States took a lively interest in the accomplishment of the work, and would attentively examine any proposals that might be made, or plans that might be suggested for its joint execution, with an earnest desire to reconcile the interests and views of all the American nations.

In 1835, a resolution passed the Senate, by which the President of the United States was requested to consider the expediency of opening negotiations with the Governments of other nations, and particularly with the Governments of Central America and New Granada, for the purpose of effectually protecting, by treaty stipulations with them, such individuals or companies as might undertake to open a communication between the Atlantic and Pacific Oceans, by the construction of a ship-canal across the isthmus which connects North and South America; and of securing for ever, by such stipulations, the free and equal right of navigating such canal to all nations, on the payment of such reasonable tolls as might be established to compensate the capitalists who might engage in such undertaking and complete the work.

Under this resolution President Jackson immediately appointed Col. Charles Biddle as an agent to make the necessary preliminary observations and inquiries, both to the Isthmus of Nicaragua and that of Panama, with reference to the opening a communication either by canals or railroads. This agent visited the latter only, and decided, on what appear to be very insufficient grounds, in favor of a railroad, as being preferable to a canal, as the means of accomplishing the desired purpose.

In the meantime the Congress of New Granada granted to an adventurer named Baron Thierry, the privilege of opening a ship-canal to unite the waters of the Chagres with those of the Rio Grande, which falls into the Bay of Panama, by means of the small river Obispo, a branch of the Chagres. No measures were subsequently taken to execute this grant, which appears to have become obsolete.

In this state of things the subject was again taken up, in 1839, in the House of Representatives of the United States, on the memorial of the merchants of New York and Philadelphia, on which a very elaborate report was made by Mr. Mercer, from the committee on roads and canals, accompanied with documents and maps illustrative of this important subject. The report concluded with proposing a resolution, that the president "should be requested to consider the expediency of opening or continuing negotiations with the Governments of other nations, and particularly with those the territorial jurisdiction of which comprehends the Isthmus of Panama, and to

which the United States have accredited ministers or agents, for the purpose of ascertaining the practicability of effecting a communication between the Atlantic and Pacific Oceans, by the construction of a ship canal across the isthmus; and of securing forever, by suitable treaty stipulations, the free and equal right of navigating such canal to all nations." This resolution was agreed to by the House.

I am not informed what measures were taken by our Government under this resolution, but it appears that the Government of New Granada had already made, in the year 1838, a grant to a French house of trade, under the firm of Salomon, Taile, & Co., of the privilege of constructing either macadamized roads, or railroads, or canals across the isthmus. It is also stated that the house in question has already constructed a road from the Bay of Chorrera to the junction of the Rio Trinidad with the Rio Chagres; has formed an association with another house in England; and has ascertained by actual levellings the practicability of constructing a ship-canal, to connect the Rio Chagres with the Rio Grande, by a newly discovered route, on which the summit level does not exceed forty feet. This canal, it is said, will require no locks, but will form by an open cut an artificial strait from sea to sea of sufficient dimensions to admit the largest vessels. I confess myself at a loss to reconcile this statement, so far as respects the alleged results of the surveys made by the engineers employed by this association, with Baron Von Humboldt's letter to Mr. Salomon, dated August 1, 1842, an extract from which was read in the Chamber of Deputies, by Mr. Guizot, on the 10th of June, of the present year. In his letter, Baron Von Humboldt refers to the advice he had formerly given to the British embassy at Paris, to cause a competent engineer to be sent from Jamaica to explore the isthmus, with a view to ascertain the practicability of the new route in question, and expresses his regret that nothing had been done in consequence of this advice: "I am sorry to learn," says he, "that you are no farther advanced in your interesting undertaking than you were when I had the pleasure to see you in my last visit to Paris. Five and twenty years have now elapsed since the project of a communication between the two oceans, either by the Isthmus of Panama, the Lake of Nicaragua, or the Isthmus of Cupica has been proposed and discussed topographically; but nothing towards realizing this project has yet even been commenced. I should have thought that the English embassy might have found the means of inspiring confidence, by promising to send a man of science (an engineer) in order to study the valley which separates the two seas, and along which the canal might be cut to the western part of the port of Chagres. Be persuaded that those persons who make use of the authority of my name to support the idea that the two seas are not a level, only do so in order to excuse themselves from engaging in the undertaking."

M. Guizot also refers in his speech to a communication made by our countryman, Mr. Warden, on this subject, to the Academy of Sciences, on the 26th of December, 1842, which, however, must relate to some

other project than that of the French and English association, as Mr. W. speaks of a ship-canal to unite the small rivers which fall into the Bay of Chorrera with the Atlantic, by some route which is not explained, but which would require the use of locks. Mr. Guizot draws no other conclusion from these different statements than the very reasonable one as to the possibility, and even probability, of the project of a ship-canal at the Isthmus of Panama being realized; from which he very justly infers the most important consequences as inevitably to result in respect to the commercial relations between Europe and Asia. At the same time, the French Minister cautiously abstains from expressing an opinion as to the manner of proceeding in order to accomplish a design so important to the French, English, and Dutch insular possessions in the Pacific ocean. He only admonishes the Chamber of the necessity that France should not remain an indifferent spectator, at a moment when Great Britain had already taken a position in Central America upon all the points where the passage might be cut: in the Gulf of Honduras, on the Mosquito shore, and more recently at the isle of Moatan. Not that she sought to appropriate solely to herself the undertaking, but in order to be the first to profit by it, and to derive from it the greatest possible advantages. This admonition applies with equal force to the United States, who have still greater interests at stake in the question than France, and indeed than any other nation. The fair conclusion seems to be, that it can only be satisfactorily settled by the cordial co-operation of the three great maritime Powers.

In order fully to understand the description of the two last possible communications between the two oceans enumerated by Humboldt, it is necessary to state that the great Cordillera of the Andes, as it approaches the isthmus which unites the two American continents, divides itself, under the second degree of north latitude, at the knot of mountains which contain the sources of the Rio Magdalena, into three separate mountain chains. The first of these stretches to the northeast between the Lake of Maracaibo and the city of Valencia, and unites with the Cordillera running along the coast of Venezuela. The second, or middle chain, (that of Panama, Guanacas, and Quindia,) divides the valley of the Rio Cauca from that of the Magdalena, extends itself in a northern direction, and fastens itself in the province of Antioquia on to the most western chain of New Granada, which gradually sinks down and disappears between the left bank of the Rio Atrato and the coast of the Pacific. In this ridge is included the highest peak of the Andes north of the equator—that of Tolima, which is 17,200 feet above the level of the sea. The third, or western chain, is that of Choco, on the west side of the Rio Cauca, which approaches so near to the second as to leave only a narrow rocky bed for the escape of this river to the sea. From its declivities flow the Rio Atrato (also called the Rio Grand del Darien, Rio Dabeiba, and Rio del Choco) northward into the Gulf of Darien, and the Rio Noanama (commonly called the San Juan) south into the Pacific ocean. As the mountains approach

the isthmus of Darien, they gradually sink down towards the coast of the Pacific into a level plain. The mountains of the Isthmus of Panama may, by their direction and geographical position, be considered as a continuation of the mountains of Antioquia and Choco; but there is hardly a single ridge or elevation to be found in the plains to the west of the lower Atrato.*

4. The fourth possible communication, then, is by the Isthmus of Darien. To the southeast of Panama, following the coasts of the Pacific ocean, lie the bay and port of Cupica. At the time when Humboldt wrote the geographical position of Cupica was very uncertain; but Berghaus has since shown, by the analysis of various astronomical observations, that it lies in seven degrees fifteen minutes north latitude, and eighty degrees six minutes and three seconds west longitude from Paris.† From Cupica the traveller passes over a flat country (*terreno enteramente Hano*) very proper for the excavation of a canal, which, at the distance of five or six leagues, would unite with the river Naipi or Naipipi, which joins, near the village of Zittara, the great river Atrato, which flows into the Gulf of Darien. The navigation of the Naipi is impeded by cataracts and rapids, which, according to Captain Cochrane, would require a lateral canal to avoid them.‡ The great chain of the Andes is here entirely broken off, and sinks into hills, and then into a level plain between the bay of Cupica and the mouth of the Atrato. But it would require a much more accurate knowledge of the country than we at present possess to determine the practicability of constructing a ship-canal in this direction.

5. The fifth and last of these communications which might possibly be effected is that which would pass through the transversal valley formed by the two rivers Atrato and San Juan. I am wrong in saying possibly, since a communication by water between the two oceans already exists in this direction. In the year 1788 the curate of the village of Novida caused to be dug, by the labor of the Indians his parishioners, the little canal of *Raspadura*, in the ravine of that name, which is often filled by the natural inundation of the neighboring waters. This canal conducts into the small river Quibdo, which, after being joined by several other streams, forms the Atrato, which falls into the Gulf of Darien, whilst the Rio Noanama or San Juan empties into the Pacific ocean. The two seas are thus already joined together by a combined natural and artificial communication between two points distant from each other about seventy-five French leagues. This canal in its present state, is only navigable for small boats, but might doubtless be enlarged in a country where there is such an abundant supply of water from the constant rains which prevail throughout the year.¶

We have no accurate account of the elevations from actual observations, but the position of the canal in the heart of the country, its great distance

* Humboldt, *Essai Politique*, tom. i, pp. 233, 234.

† *Annalen*, 3te Reipe, 5 B'd. s. 501.

‡ Cochrane's *Travels in Columbia*, vol. II. 448.

¶ Humboldt, *Essai Politique*, tome 1, p. 225.

from the coast, and the frequent rapids and cataracts to be encountered in passing the long distance from one ocean to another, seems to constitute insurmountable obstacles to the opening a passage in this quarter for vessels of large burden.

The result to be deduced from the above geographical inquiry seems therefore to leave no other choice than that between the Isthmus of Nicaragua and the Isthmus of Panama as the medium of canal communication between the two oceans.

The reason of preferring a ship-canal to one which would require a transshipment of the cargoes of the vessels navigating each ocean, or to a railroad, which would require the goods to be landed and stored in order to their transportation across the Isthmus, cannot be better stated than in the following words of a recent English traveller: "Another consideration, in my opinion, is also indispensable to the success and utility of this undertaking, viz: that the canal should be made of a capacity sufficient to admit merchant vessels to pass through without discharging their cargoes. To make a canal for boats, or on any other scale than to permit vessels to pass on to the ulterior destination of the goods, would be entirely nugatory; the expense and delay of transporting the cargoes by boats in such a country as that through which the canal passes, would be very great; and the loss by periodical rains, robbery by an ill-regulated population, and a thousand causes, would counterbalance all other advantages; but the principle difficulty and expense would be to procure vessels in the Pacific to prosecute the remaining part of the voyage. On this ocean, at present, the freights paid for vessels are most exorbitant; and, from the nature of the coasts in the neighborhood of the canal, which are all unhealthy and unfit for the creation or maintenance of a marine, no improvement of consequence is to be expected. It would result in the case supposed of a mere boat canal, that after a cargo had been forwarded to the eastern entrance of the canal and transmitted to the Pacific by boats, the time that might elapse before a vessel could be procured to proceed with this cargo to China or other destination, would be more, and the expense greater, than if the original vessel had proceeded directly round the Cape of Good Hope. It has been lately much recommended to make a railroad from Porto Bello to Panama, or somewhere in that vicinity; but the foregoing objections apply with as much force to this project as to a canal for boats, and I should consider such an undertaking utterly useless in a commercial point of view. If, on the contrary, the canal was made capable of admitting vessels to pass through with their cargoes, the delay would be very small and the expense trifling. Asia would be thereby brought by one-half nearer to Europe, and the passage to all the west coast of America and the Pacific islands shortened in a still greater degree. This revolution in the commerce with Asia and the Pacific ocean, if it were to happen, would aggrandize the country of which we have been treating (California) in an extraordinary manner; and however distant this era may be, it is not to be supposed that, in the present

state of the world, when such rapid progress is making in every thing that is useful, this gigantic improvement will be indefinitely delayed; and particularly when it would appear that the means are but trifling in comparison to the end proposed."*

Without pretending to enter into the various technical questions which belong to the subject, it may be affirmed that experience has already demonstrated, in several instances, the practicability of constructing a ship-canal such as would be sufficient to accomplish the junction of the two oceans either at the Isthmus of Nicaragua or that of Panama.

1. The first example of the kind which may be noticed is that of the Caledonian canal, in the north of Scotland. This canal stretches across the island from northeast to southwest, from a point near Inverness, on the Murray frith, to another near Fort William, on the western coast, opposite to the Isle of Mull. It was constructed by excavations of 21½ miles in extent, and a lockage of 190 feet, connecting a succession of fresh water lakes, the beds and outlets of which were deepened to correspond with the intervening canals. The total length of the canal, including the lakes, is 58½ miles. It is 20 feet deep, 50 feet wide at the bottom, and 122 at the top. The locks are 20 feet deep, 172 long, and 40 broad. Frigates of thirty-two guns and merchant ships of one thousand tons pass through it. The canal was constructed at the expense of Government, and cost £986,924 sterling. Baron von Humboldt has noticed the striking analogy which exists between the localities of this stupendous work and those of the Isthmus of Nicaragua. The breadth of the isthmus is about the same with that traversed by the Caledonian canal. The position of the Lake of Nicaragua, and the natural outlet of this lake into the Caribbean sea, presents several traits of resemblance with that gorge of the Scottish highlands where the river Ness forms a natural communication between the mountain lochs and the frith of Murray. At Nicaragua, as in the highlands of Scotland, there is only a single isthmus of earth to be cut through; for if the Rio San Juan is from thirty to forty feet deep, as is stated, it will only be necessary to canalize it partially by embankments or lateral cuts.†

2. But the most stupendous work of this kind in Europe, and perhaps in the world, is the ship-canal from Amsterdam, in Holland, to Nieuwediep, near the Helder, which I have had an opportunity of examining. This canal was constructed by the Dutch Government to avoid the inconvenience attending the ordinary navigation from the port of Amsterdam to the German ocean by the Zuyder Zee, which abounds in sand-banks and shallows. The length of the canal 50½ miles; the breadth at the surface of the water is 124½ feet; the breadth at the bottom 36 feet; and the depth 20 feet 9 inches. Like the Dutch canals generally, its level is that of the highest tides, and it receives its supply of water from the sea. Of course, the only locks it requires are two tide-locks at the two ends; but there are besides two sluices with flood-gates in the intermediate space. The

* Forbe's History of California, p. 318.

† Humboldt, Voyage, &c., tome ix. p. 362.

locks and sluices are double; that is, there are two in the breadth of the canal. There is a broad towing path on each side, and the canal is wide enough to admit of one frigate passing another. The whole work cost twelve millions of guilders, being something more than the expense of the Caledonian canal, which it far exceeds in the volume of water it contains. But it should be added that, on account of the evenness of the ground it passes through, the difficulties encountered by the engineer were trifling in comparison with those which have been overcome in the Highlands of Scotland.

These great hydraulic works show what may be accomplished by the power of man directed by scientific skill, in overcoming the obstacles interposed by nature to such artificial communications. Here is the true "secret of a strait," which Columbus, Chas. V, and Cortez vainly sought to discover.

I am, my dear sir, ever truly yours,

HENRY WHEATON.

To FRANCIS MARKOE, jr., Esq.,

Corresponding Secretary of National Institute.

P. S. Since the above was written I have received a letter from my friend Mr. Warden, who states that the communication made by him to the Academy of Sciences at Paris refers to the route said to have been explored by the association directed by M. Salomon, so that I am more than ever at a loss to reconcile the contradictory statement respecting the results of the surveys in this direction and the nature of the works it is intended to construct.

H. W.

PACIFIC AND PANAMA CANAL.—The Louisville Journal says: A naval friend, recently in South America, has given us the following statement of the route of the ship passage which is to cross the Isthmus of Darien, uniting the Atlantic and Pacific oceans; from Chagres up the river Chagres, fifteen miles, to the Trinidad river; thence up the Trinidad six and a half miles, with a deep cut across the bend of the river; thence up the Vinto Tinto river seven and a half miles; thence by canal six and a half miles to the Bernadito river; thence down that river two and a half miles; thence by canal five miles to the Farfan river; thence down the Farfan ten miles to its debouch in the Rio Grande, near Panama—making the total distance, from sea to sea, fifty-three miles.

FRESH WATER FROM THE BED OF THE RIVER.—For some weeks past, as we learn, the process of boring for fresh water has been in progress at the end of steam-ship wharf, at East Boston, only a few hundred feet from the main channel of the harbor, and over three hundred feet from the shore of East Boston. After boring ninety feet, it was feared that water would not be obtained, and the workmen commenced taking up the tubes. Some twenty or twenty-five feet of the tubes had been taken up when a powerful spring opened into the tubes, which bids fair to supply an abundant quantity of water. A twelve inch tube is to be sunk in this spot, and it is expected that water of an excellent quality will be obtained for the supply of the steamers and other shipping. The boring was carried on where the water is from fifteen to eighteen feet at high tide, and probably four or five feet at low water.

Domestic Miscellany.

From the Farmer's Monthly Visitor.

CAPTAIN TOPLIFF, THE SAILOR FARMER.

Of all the men not bred to farming, who, when the earliest part of life is over, fancy retirement, green fields and singing birds, perhaps sea-faring men succeed the best. Your merchant buys a farm; spends his money freely; sets out his tress in avenues; has plenty of heads besides his own to direct him in the operations; and so with almost all other callings; but an exception has been noticed in the sea captain; he knows nothing of farming, but he comes to it naturally and kindly. In the first place, habits have been formed for anticipation; he is over looking ahead of the time, to be in readiness when the wind shifts, and generally anticipates the change. He is so accustomed to command, and to feel that the responsibility is upon him, that he takes his own counsel only, and follows no advice but his own; and then the treacherous elements of winds and waves admonish him to have a place for every thing, and to keep every thing in place; a practice that is both time and money with a farmer.

I have known a number of instances where men, who until some forty-five or fifty years of age ploughed the deep, took their savings and bought small farms, and they almost always made the ends meet. They generally locate within sight or smell of the ocean, and are among those that may be seen in a neat little boat in summer gliding over the waves of our inner harbors, taking a few fish, and then returning to their little homes; for one of their merits is never to purchase much land.

These farmers too, I know not why, are apt to be distant in their manners; they do not generally associate familiarly with the neighbors, but maintain towards them a sort of ship-board distance; but when they are approached on business are courteous and polite.

One of these captains, who, in the merchant service, had accumulated a comfortable property, bought an estate some two miles from the sea shore, in the centre of which was a hill that commanded a fine prospect of land and water. This hill was the only uncleared land upon the place, and although there was a very suitable house upon the road which bordered upon one side, our captain farmer erected a small one on the apex of the hill with only two rooms and a kitchen, having a little balcony or lookout place for his summer afternoons and a long mast-head telescope. The building of this house began the wonder: no workmen of the neighborhood were employed; it was framed at the next town, and was actually put up before any one knew he intended to build one.

In the next place, he excluded a number of idle persons, curious to know what he was about, by ordering them off his premises. His farm hands were Germans, who had not yet learned enough of the language to converse, these were put into the house by the road side, and formed a sort of advance guard to the captain and owner farther inland. As he attended public worship regularly, riding a switch tail-

ed horse to and fro, the Parson attempted to make a visit, but was told, "not at home." The farm began to wear a fine appearance, as he was out early and late with his workmen; and if some of the neighbors ventured to ask him, by way of an introduction, what he intended to plant in the field he might be ploughing, he would answer in a manner that discouraged further inquiry, and turn the other way. All thought him rich, some called him proud, others said he had been crossed in love, which was doubtless founded upon the circumstance that he was a bachelor. His work was all done in good time, his crops well adapted to his land, and many said that he must been a farmer in early life. Curiosity grew from day to day. "What sort of a man is he," would inquire some certain aged young ladies who had expected that the Parson would certainly be able to tell them all about him. "What can he be doing up there with that glass," said others, as they saw it glisten as he aimed it off daily upon the ocean. "He is the proudest creature in the world," others would remark, "he thinks himself too good to speak to one."

But how this wonder was increased when, one afternoon, a six-pounder iron cannon with a ship's gun carriage was brought from the nearest sea-port and planted near his house upon the hill! The whole neighborhood was in commotion; the news spread from house to house. "Nobody has threatened him that I know of," said a very pretty widow, "that he need prepare for a siege."

What was their astonishment the following calm morning, when at dawn, the six-pounder was heard for six miles around! Every one listened; those in doors came out; but one fire was all. Again, at the setting of the sun, bang it went, and the smoke rose in a little cloud above the house at the top of the hill. Day after day, and week after week, this was repeated; and the hands were seen to turn out to their labor when the gun was heard, and at evening they left the field and went home upon the same signal.

Some boys that were sent to see what they could discover, and who crept through the bushes to quite near the house, reported, that at sun set the captain rung a bell, upon which, a negro man with an apron like a cook came out and touched off the gun. He then re-loaded it, threw a painted cover on, and retired. Curiosity, like a plant, has its growth, maturity and decline, and in this case after about three months of fruitless endeavors it began to wear away, and no other notice was taken than a passing remark of, "there goes the captain who lives on the hill and fires the big gun."

As wonder diminished, also did the desire to awaken it, and when nobody appeared to notice or care for what he was about, he began to show a disposition to give the information.

By degrees Captain Topliff was found out to be quite like other people. He bade the neighbors good morning, and submitted all his plans of farming operations, and if any one asked his advice, he gave it without hesitation; and, what appeared rather surprising, his views upon farming were so fraught with wisdom, that many who had cultivated the soil all

their lives profited by his advice, and wondered where he could have got his knowledge.

In the third year of his residence, his farm was admitted to be the most productive and best in the whole town of equal dimensions, and on the meeting of the Agricultural Society, which he joined, he was, upon being complimented with a premium, asked how it could possibly happen that a man who had until so recently all his life followed the sea, could be so excellent a practical farmer? His answer was, "that before going to sea on his last voyage, having made up his mind to quit the ocean for the land, he purchased what he considered the cheapest article of the book kind; the whole series from the commencement of an agricultural publication. This he read upon the voyage, and bringing his judgment to the selection of what was valuable, he found he was at home the moment he took possession of his farm."

But for this circumstance can we doubt that his effort would have been a failure, or nearly so? And perhaps no money that is expended produces such an enormous interest as that for periodicals upon farming.

Captain Topliff was soon acquainted with all the neighbors, and among them with Deacon Morey, whose three youngest daughters had all married in the neighborhood. Nabby, the eldest, and like many other oldest daughters, the most capable of the family, was left; but Captain Topliff, who had seen much of the world, was as good here as in sifting periodicals. He saw her worth, and was not so faint hearted as to keep it to himself. Nabby, who in early days had learned the couplet of "There lives no goose so gay," &c., soon took up her residence at the house upon the hill. She was not partial to being waked up at the dawn, and so the captain, upon her merely hinting the matter, told the cook to discontinue it, and from that time to look to Mrs. Topliff for orders. Year after year passed away; the farm and the wife engrossed the whole of the captain's attention, and he was often heard to say, that he began to be happy when he bought a farm and improved it, but was only perfectly so from the hour that Nabby Morey became Mrs. Topliff.

DUXBURY, MASS.

U. S. ARTILLERY.—The fourth Company of U. S. Artillery, Lieut. Duncan, with 54 men and four field-pieces, arrived in this city yesterday noon, on their way from Fort Adams, Newport, to New York. They reached the city at an earlier hour than was anticipated, in consequence of the coolness of the day and a cloudy atmosphere. After a short halt at the Tontine, where the officers had an interview with Governor Cleveland, they took up their quarters at Hart's Hotel in Fleet street. They carry no forage with them, but stop at public houses on the road, where "man and beast" are entertained.

In compliance with an invitation from Governor Cleveland, who happened to be present in the city, Lieut. Duncan politely consented to exhibit his artillery field drill. The "Green" was thought to be too small, and the extensive plain in the lower section of the city, in Barnesville, near the railroad bridge, was selected for their operations. The afternoon

was lowering, but fortunately during the drill no rain fell, and the clouds shut out the hot sun most opportunely. Soon after four o'clock, the company arrived on the ground with their pieces, and shortly after were in full drill. The ground is an extended plain, but many little irregularities of the surface exhibited to greater advantage the severity of the exercise and the rapidity with which heavy artillery and powder carriages can be taken over every variety of country, with horses, upon the full run.

The line was first formed with the four artillery pieces. They were then unlimbered, loaded and discharged, two rounds each. The soldiers formed near their pieces, when Governor Cleveland reviewed them, the officers and soldiers presenting arms. The various exercises of the Flying Artillery followed in beautiful exactness, and with an exhibition of skill and rapidity which seemingly could not be surpassed. An order would be given to take a position in opposite portions of the field. The horses with their pieces and powder wagons were put upon the full trot, scattering the people and sweeping the field. When they reached the point designated, the artillerists seated on the powder carts would leap off, the guns were instantly unlimbered, loaded, discharged, re-limbered and off again to another position, in less than two minutes of time. Then followed a great variety of other exciting and beautiful evolutions. Changing fronts, by which the piece is instantly turned upon its hind wheels, while the four horses attached to the forward ones would make a short, rapid circuit, followed by the powder carriages upon the full run, until the entire front of the line was changed in the briefest period of time. They would advance with the four pieces abreast upon a rapid gallop, change fronts, unlimber, load, fire, re-limber, and then again retreat to any position on the field in sections or in battalions. Every thing was done with admirable skill, rapidity and exactness. The horses performed their parts with as much fidelity as the men; and when the whole company, powder carts, artillery pieces and officers mounted, went dashing across the field in full gallop, the scene was almost electrical.

The drill occupied about an hour and a half, portions of the time by the bugle and then again by command. The most favorable impressions were left upon the minds of the hundreds who thronged the field, of the efficacy of this corps, and the thoroughness of its discipline. This company, we understand, has seen much hard service, especially in Florida, where they served two seasons; and since their return they had occasion to visit Newport about the time of the "Dorr war." Happily for the country, their services were not needed, and now they are quietly returning to their old quarters at New York. The men are vigorous, muscular, bronzed fellows, and their officers thorough disciplinarians as well as cultivated gentlemen. They have been on the road seven days, and will not reach their destination before next week. Governor Cleveland, with the Mayor and some military gentlemen visited the field in company, and seldom have we seen so much feeling expressed at so sudden and unexpected a gra-

tification. In addition to the hundreds of people on foot, the environs of the field were occupied by carriages, many of them filled with bright eyes and feminine beauty. The company leaves this morning for New York.—*New Haven Courier*, September 8.

FRENCH AND ENGLISH MUSKETS.—The *Presse* states that several experiments have been lately made, which tend to establish the superiority of the French percussion muskets over those of English manufacture. The barrel of English musket is, it states, of greater diameter than that of the French weapon, but this is compensated for by the length of the barrel in the French piece. The new model lately introduced in France it considers as better finished than that used in England, and lighter. To miss fire, which it states is frequent in the English musket, it declares to be impossible in the French piece. It makes the following comparison between the last model of the English percussion musket and one of France of 1842: Weight of the English musket 5 kilos. 064; of the French, 4 kilos. 540: difference 524 grammes. Diameter of the barrel of the English musket 19 mill. 5; of French, 18: difference 1 mill. 6. Diameter of the English ball 17 mill. 3; of the French, 17: difference 3. In some comparative experiments, most carefully made, with 15 balls, when the powder was carefully measured, and the same paper used, the following results were given: five French muskets, loaded with French powder, marked the following numbers on the *pendule cablistique*, (an instrument ingeniously contrived to record accurately the force of an impingent body,) 214, 208, 214, 215, and 200; giving an average of 210. Five others, loaded with English powder, 221, 213, 221, 216, and 215; showing an average of 218. Five English muskets, charged with Dartford powder, gave 214, 216, 204, 187, and 196; giving an average of 203.

GREEN ROCK.—The London Nautical Magazine contains a letter from Capt. Conforth, of the British ship *Otterspool* of Liverpool, stating that May 24, 1843, with moderate breezes and clear weather, being nearly in the position of Green Rock, as laid down in some of the charts of the Atlantic, he ordered a good lookout to be kept for it. At half past 7 P. M. breakers were seen very distinctly on the lee bow, about four miles off. When first seen, they resembled water breaking over a wreck, and when abreast of it, a circular space of water about the length of a ship in diameter, was plainly seen quite smooth after the sea broke. Capt. Conforth thought that the breakers would hardly have been seen, if the sea had been smoother. He was convinced that it was a danger of some kind. The position of the breakers was in latitude 45 01 N., and longitude 25 45 W., and he recommends any one running near this latitude and longitude, to *keep a good lookout*.

There can be no harm in adopting the suggestion of Capt. Conforth; but we have little faith in the existence of a shoal or ledge in that part of the Atlantic. Nevertheless, it might be well for our government to send one of the "home squadron" to look after this rock, and decide the question of its existence.—*Boston Mercantile Journal*.

SUPPRESSION OF DUELLING.—The community are aware that a society is about being established in our city for the avowed purpose of arraying against the detestable and murderous code of honor which has so long prevailed in Louisiana, the influence of a well directed, efficient, and wholesome public opinion. In vain have penal statutes been fulminated against the practice of duelling; in vain have the legislature decreed death as the punishment of the "honorable murderer." While this odious relic of feudal ages was sustained and cherished by the habits, feelings, customs, and mistaken chivalry of our population, the penalties of the law were disregarded. Too severe and utterly repugnant to the sentiments of the community for which they had been formed, they were never enforced.

It is impossible to extirpate by legislation, a vice, however fraught with calamitous consequences it may be, which is intimately blended with the feelings and sense of the citizen. We must correct these feelings, and enlighten the blind instinct of personal bravery, if we would hope successfully to check its progress. We cannot at once radically destroy the propensity to duelling; but we can, by united public opinion, so modify the laws which now regulate its practice, as to render it infinitely rarer and less murderous. Such are the views which, we understand, guide a very considerable number of our most respectable townsmen; many of whom have proved their valor on the field of honor, and are therefore well fitted to become leaders in this philanthropic enterprise.

A prominent cause of the frequency of duels in Louisiana is the custom relative to the choice of weapons, a custom which places the insulted party literally at the mercy of the bully and the bravo. In Europe, and especially in France, where duelling still prevails, though to an extent far more limited than among us, the individual who receives the insult has invariably the choice of weapons. He has something more; for if fire arms are selected, the aggrieved party has the first fire, and the challenged party must stand the risk of being killed, before he is allowed to aim at his antagonist. These two excellent provisions in the code of honor as observed in France, tend directly to render duels more infrequent, and less apt to spring from light and trivial causes. Now let us see how the matter stands in Louisiana. Two individuals have an altercation, one of a character which, under a proper system, could not legitimately lead to any thing serious. Each of the disputants fearing that the quarrel will be pushed to extremities, and anxious to anticipate his adversary in the privileges of the challenged party, eagerly seeks an opportunity to offer a personal insult. When such things are sought for, they are not difficult to find, and accordingly, before many minutes, one of the parties receives a slap in the face. Now what is his recourse? He must challenge the man who struck him, and the individual who perpetrated the insult, avails himself of the wrong he has committed, and selects his weapon; one with which, peradventure, his antagonist is wholly unacquainted. Yet must the latter meet his foe with

all this fatal inequality between them, and, first degraded by a blow, is in all probability to be further satisfied by six inches of steel in his ribs, or a bullet in his body. It requires no argument to prove that when the challenged party is allowed such extraordinary advantages, insults will be more commonly provoked, and duels must necessarily be more frequent.

One of the objects of the association to which we have referred, will be to engraft on the code of honor here, the palpably just and reasonable practice of France. Where an insult has been offered, the aggrieved party shall have the choice of arms; where that insult has been pushed to the extremity of a blow, the further privilege of the first shot is accorded to the insulted individual, in the event of the selection of fire arms. These two innovations upon the present unjust, one-sided custom, will be as much as in the existing state of public feeling on the subject of duelling, can be rationally looked for. Their effect must be to diminish duelling. Let us hope that they may prove preludes to the total eradication of as false a system as ever sent mortality to its final account, "with all its imperfections on its head."—*New Orleans Bee*.

DUELLING.—That there has been a great change of public opinion on the subject of duelling, even in those parts of the country wherein it has been most rife, is obvious to common observation. Let popular sentiment in this matter be compared now with its condition ten years since, in the southern States, and the transition from a morbid to a healthy state of feeling cannot admit of denial. The cure, like that of all moral diseases, of which the sources are deeply seated in the mind, has been slow, if not yet effectual, while nothing but the personal influence of those whose example wins and commands imitation could have given an impulse to this important moral revolution. Much remains to be done, and we are happy to perceive that the subject has awakened attention in the west. The *New Orleans Picayune*, a paper conducted with talent, has recently taken in hand this subject and zealously urged reformation. If in the west a momentum can be given to this movement, if those would act who are able to shape public opinion in that quarter, where there exists so much susceptibility to a false sentiment of honor, we would regard the amendment as having reached a stage that would ensure final success.

Too much praise cannot be awarded the recent example of a citizen of our own State, of unquestioned courage, who refused to accept a challenge. We allude to the instance of Capt. Perrin, whose conduct on that occasion received a distinguished mark of public approval. If citizens in the rank of life of Capt. Perrin, were, in similar situations, to exhibit the same moral courage, duelling would soon be driven forth from the borders of the land.—*Charleston (S. C.) Patriot*.

DUELLING.—Accounts of duelling seem to be on the increase, showing either that public opinion is turning once more to its aid, or that the law is a dead letter, or that personal combat is to be the great arbiter of personal disputes. Either of these facts is

eminently deplorable, and we know of nothing better to remedy the evil than the adoption of a similar plan to one recorded in the History of Sweden.

Adolphus, King of Sweden, determined to suppress those false notions of honor that found their exponents in a pair of pistols and a couple of rapiers, and issued a severe edict against the practice. Two gentlemen, however, generals in his service, on a quarrel, agreed to solicit the King's permission to decide their difference by the laws of honor. The King consented, promising to be present at the combat. He went, attended by his body guard, and the public executioner; and before they proceeded to the onset, he told the gentlemen that they must fight till one of them died. Then turning to the executioner, he added, "*Do you immediately strike off the head of the survivor!*"

This had the intended effect. The difficulty between the officers was adjusted, and no more challenges were heard of in the army of Gustavus Adolphus. If Congress would pass a law of similar features, and if the people would see it executed, we doubt not that the bloody personal conflicts called *duels*, would no longer have existence; or if so, the country would be rid, in a summary way, of hosts of biped nuisances that can well be spared.

We are glad to see the public press calling attention to this subject. The Pennsylvania Inquirer says of duelling:

"The evil has been tolerated too long, and prevails even now, with all the light of civilization and Christianity so characteristic of the age, to a very serious extent. Dozens of lives have been lost by duelling within the last year. A known and avowed duellist should receive the brand of public indignation. He should be regarded as unworthy to hold office, or to receive the votes of his fellow citizens for any situation of honor or profit. The older officers of the Army and Navy might readily do something of a laudable kind upon this subject."—*Boston Mer. Jour.*

IMPORTANT FROM THE FRONTIER.—The Bangor Whig of Monday last contains an account of a public meeting held in that city on Saturday, to consider the subject of the removal of the United States troops from Forts Kent and Fairfield, and to take such order as might be deemed expedient to have them restored. The meeting was called to order by Hon. Gorham Parks, and Governor Kent was chosen chairman, and E. G. Rawson, Esq., secretary.

The Whig says:

Governor Kent, on taking the chair, addressed the meeting on the importance of having troops upon the Fish river; that there were a large number of settlers there who spoke a different language from our own, without magistrates, without a knowledge of our laws, and without any definite idea of protection except in the presence of an armed force. These people are in a transition state, and passing into ideas and habits suited to make them a part of our Government; but until this is accomplished, it is a duty we owe to them, to ourselves, and the peace of the State, to afford them protection, such as they can have confidence in, and such as shall be effectual.

He stated the anxiety of Lord Ashburton to have the line of boundary include these settlers within the British possessions, and the assurances that were given that they should be protected, and their interests regarded and their welfare promoted as much under our Government as under the Provincial. But they were now left at the mercy of plunderers, and without a knowledge of law or the means of its execution.

The United States troops, while stationed there, had, in fact, performed many of the important functions of civil as well as military government, and had been highly advantageous to the security and comfort of the settlers, and to the peace of the State. He believed there was a misapprehension regarding this matter at Washington, and he could not but think, if suitable representations were made, that the troops would be restored to posts where they were so much needed, and could exercise so happy an influence.

Colonel Parks stated, that for sixty miles upon the lines the settlers now needed protection, which could only be furnished by troops; that the whole region there, on the British side, had been permitted to lumberers, and that the rough, uncouth, uneducated, and lawless lumbermen of the Restigooch and Mirimichi were thronging into the country, and as they were a sort of semi-barbarians, there could be no security to the harmless and peaceable settler, if the military power was absent. He was acquainted with that country and people, and he believed them at present incapable of exercising civil government. He was confident that the facts in the case were not known at Washington, or the troops would not have been withdrawn, and upon suitable representation being made to the President or the Secretary of War, he was confident an order would issue for their restoration. He therefore moved that a committee of seven be appointed to draft a memorial to be offered for acceptance and signatures next Monday evening.

Levi Bradley, Esq., the Land Agent of the State, on being called upon, stated that he heartily concurred in the views that had been expressed, and in the importance and absolute necessity of the troops being restored. He also read an official letter from Capt. William P. Parrott, one of the surveyors for Maine and Massachusetts, who has been located upon the territory, stating the helpless and exposed situation of the settlers, and their anxiety since the withdrawal of the troops.

Hon. William D. Williamson and Hon. Elisha H. Allen severally addressed the meeting upon the subject, and all concurred in the necessity of the troops being stationed at Fish river, and on the St. John, above.

MARINE GLUE.—It is said that the decks of the beautiful new royal steam-yacht Victoria and Albert, are laid with solid mahogany, joined together with "Jeffery's Marine Glue," the qualities of which have given great satisfaction, as under the most powerful sun it will not dissolve, or soil the most delicate satin shoe, at the same time it retains its adhesive qualities, and resists the action of the water in the expanding and contracting seams.

WASHINGTON.

THURSDAY, SEPTEMBER 28, 1843.

MONUMENT TO THE MEMORY OF THE LATE DR. MORGAN.—In pursuance of resolutions passed at a meeting of the friends of the late Dr. MORGAN, of the U. S. Navy, held in Philadelphia on the 25th of February, a circular was issued, inviting subscriptions to aid in the erection of a monument to the memory of the deceased, at Laurel Hill Cemetery, the proprietors of which had generously presented a site for the interment of his remains.

It is gratifying to learn that the full amount necessary for effecting this laudable object has already been subscribed.

BATTLE OF PLATTSBURG.—The anniversary of the battle of Plattsburg was celebrated by the Clinton County Military Association of New York and the citizens of Plattsburg generally on Monday, the 11th instant. Gen. WOOL and suite, and several other gentlemen who were in the battle, were present by special invitation. We will give next week a full account of this interesting celebration as published in the Plattsburg Republican.

ACCIDENT AT FORT MCHENRY.—An occurrence happened off Fort McHenry, about two o'clock on Tuesday afternoon, which, though not equaling the memorable bombardment of 1814, created no little alarm to those whose miraculous escape we are about to record. It seems that the company, or at least a portion of them, stationed at the fort were engaged at target firing, and that a ball was discharged, which, after striking the water several times, came in contact with the schooner *Lassinta*, Capt. Lewis, of Vienna, which was on her way up the river, loaded with wood, and about a mile and a half from the fort. The ball passed through the waist of the vessel on the larboard side, about three feet abaft the fore shroud, then glancing abaft a few feet, lodged in the wood forward of the fore shroud, where two of the men were standing, one of them being only about five feet from the spot where the ball struck. The escape of those on board was truly miraculous. We have not ascertained how it was that the ball was fired in that direction, or rather how it happened to escape towards the river at all, as we cannot believe that the officers in command at the fort would for a moment countenance or permit any thing of the kind, as, in any event, it might endanger, if not cause the loss of life. We understand that the officer in command at the fort, when the occurrence took place, immediately paid for all damages done the vessel.—*Baltimore Clipper*.

COAST AND HARBOR DEFENCE.—The editors of the Bay State Democrat have just examined the plan and description of a newly invented *fire-ship*, which appears to them to be superior for the defence of

our sea coast and harbors, in the event of war to any thing heretofore devised. It is a steamship of great strength and power, and is to be provided with an inflammable liquid, which, we are credibly informed, burns with such fury as not to be extinguished by water, and immediately to inflame any combustible substance on which it is thrown. It is as powerful as the celebrated *liquid fire* of the Greeks. The ship is furnished with powerful machinery to project this liquid upon the vessels of the enemy, and thus burn them up. The editor says:

The ship is to be entirely covered with rolled iron plates two inches thick, above the water line; and the sides and deck, which are two feet thick, of solid oak timber, are rendered ball proof in consequence of being composed of inclined planes so arranged as that no cannon ball fired from a ship-of-war, can impinge upon them at a greater angle than twenty degrees. They must consequently ricochet or glance off, without penetrating in the slightest degree. The crew are safely located below deck, and the ship is as perfectly under control as any steamship in our navy, and as capable of going to sea. For any thing we can see, a few of these ships stationed in our harbors, bays, and inlets, would render them entirely secure from any naval attacks in time of war, and would also prevent the blockade of any part of our coast by a hostile fleet. Capt. Partridge, President of Norwich University, proposes to deliver a lecture at the Marlboro Chapel, in which he will exhibit a plan of the proposed fire-ship, accompanied with an accurate description of the same, and of the uses to which it can be applied.

A SHOAL IN BASILAN STRAITS.—The English Nautical Magazine contains the journal of Captain C. F. Williams, on a voyage from Boston to Manilla, in the ship *Unicorn*, in 1841-2. On his return passage, in passing from the Sooloo sea through Basilan straits, the ship struck on a shoal not noticed in any charts, the north end of the westernmost Santa Cruz isles, bearing E. by S., 1-4 S., seven miles distance, Fort Caldera N., 1-4 E., Fort at Samboangan N. E. by E., 1-4 E. After lying on the shoal several hours, the ship was hove off, without sustaining any apparent damage. The reef extends to the west of these islands seven miles, and the ship grounded on the outer edge of the reef.

Captain Williams mentioned as a singular fact, that within ten days four ships should have struck at or about the same place. Eight days before the *Unicorn* struck, two English vessels from Canton went on the shoal; one received no injury, the other was obliged to go into Sourabaya for repairs. The other vessel was the whaling barque *Marquis of Allsborough*, of London; she received no injury. Capt. Williams says "it is necessary to approach these islands, particularly in the night, with great caution, for the tides are very rapid, and in light winds and calms are liable to carry a ship on the reef projecting far to the west of the isles, and but little known." Horsburg, in his directions, states that to the west of these isles the strait is clear from side to side, but a reef projects to the north westward.—*Bos. Daily Adv.*

PERCUSSION PRIMER.—The N. H. Courier states that the article which was manufactured by Burr & Whitmore, in New Haven, before the forgeries, was a small paste board quill, about an inch long, filled with combustible material, hermetically sealed, having a string projecting from one end. This Primer, as it is technically called, is inserted in the gun, when the string is pulled ignition takes place, and the explosion of the piece instantly follows. It has been found superior to all percussion locks or caps, and will supersede every thing of the kind for heavy ordnance. They originated in France, but those manufactured in New Haven were the first ever made in this country.—*New York Sun.*

CURRENTS OFF THE CAPE OF GOOD HOPE.—It is well known that a strong current is generally experienced to the eastward and southward of the Cape of Good Hope, setting to the westward, and caused doubtless by the trade winds, which force the waters on the Mozambique coast, and to the south and westward across the Agulhas bank. But it should be recollected that this current does not always set to the westward. It sometimes sets to the eastward. The Unicorn, Capt. Williams, found an easterly current of sixty miles, on her voyage to Manilla, and on her return, found a current setting to the westward. The English ship Northumberland, and several other vessels, within a few years, allowing for a westerly current, stood to the northward too soon, and ran ashore and were lost. To remedy this evil, a plan was projected a few years ago, to erect a light-house on the southern point of the Cape. But, for some cause, the plan was abandoned, a circumstance which is much to be regretted.—*Boston Mercantile Journal.*

ARMY.

QUARTERMASTER'S DEPARTMENT.—Capt. J. R. Irwin, A. Q. M., has been assigned to duty at Jefferson Barracks.

DRAGOONS.—Fort Croghan has been abandoned, and Capt. Burgwin's company G, transferred from that post to Fort Leavenworth.

1ST INFANTRY.—Upon the arrival of Capt. Burgwin's company of dragoons at Fort Leavenworth, Capt. Lamotte's company C will proceed to Fort Crawford.

NAVY.

Sept. **ORDERS.**

22—Lieut. R. L. Tilghman, sloop Yorktown, New York.

Surgeon Charles Chase, receiving ship, Boston.

Surgeon R. J. Dodd, rendezvous, Philadelphia.

Surgeon L. B. Hunter, ship Princeton.

Ass't Sur. E. Hudson, sloop Warren, Norfolk.

Mid. J. H. Johnson, frigate Cumberland.

Mid. W. W. Queen, brig Perry, Norfolk.

Gunner A. W. Randall, sloop Falmouth.

P. Mid. D. Ammen, store-ship Lexington, as acting master.

23—Lieut. S. R. Knox, sloop Yorktown.

P. Mid. J. S. Ridgely, detached from frigate Savannah.

P. Mid. J. W. Ripley, navy yard, Portsmouth, New Hampshire.

25—P. Ass't Sur. R. Woodworth, sloop Yorktown. Carpenter John Overman, sloop Warren.

25—Carpenter Loman Smith, rec. ship, Norfolk.

27—Commander John S. Chauncey, command of sloop Vandalia, vice W. J. McCluney, detached on account of ill health.

P. Ass't Sur. J. Malcolm Smith, detached from frigate Savannah.

Mid. J. S. Byers, leave 3 months, having returned from ship Vincennes sick.

Gunner John M. Webb, navy yard, New York.

Naval Intelligence.

U. S. VESSELS OF WAR REPORTED.

HOME SQUADRON.—Ship *Vandalia* dropped down from the navy-yard to the anchorage below Norfolk, on Monday.

Brig *Bainbridge*, Lieut. Comd't Johnston, arrived at Norfolk on Sunday last, in twenty-four days from Vera Cruz. The following is a list of her officers:

Lieut. Comd't Z. F. Johnston; Lieutenants, J. W. Revere, Charles Thomas; Acting Lieut. G. W. Grant; Acting Master, R. W. Shufeldt; Purser, George H. White; Ass't Surgeon, Joseph Beale; Midshipmen, E. C. Stiles, R. J. D. Price, J. E. De Haven; Captain's Clerk, William Laird Jr.,

The *Bainbridge* brings intelligence that the ship *Vincennes*, Captain Buchanan, was at anchor off Sacrificos on the 1st September, awaiting the arrival of despatches from the Hon. Waddy Thomson, our Minister at Mexico.

MEDITERRANEAN SQUADRON.—Ship *Fairfield* was at Trieste on the 12 of July. She had recently visited Palermo, Messina and Ancona, and would remain for two weeks at Trieste. After which time she will return to Mahon, touching at Regosa, Corfu, Athens, Tripoli, Tunis, and Algiers.

AFRICAN SQUADRON.—Sloop *Saratoga*, Commodore Perry, and brig *Porpoise*, Lieut. Stellwagen, left Monrovia, August 5th, for Cape Palmas, thence the *Saratoga* would proceed to Porto Praya, Cape de Verdes, to meet the *Macedonian* flag ship. The *Porpoise* would remain on the coast. All well.

Deaths.

In Norfolk, Va., on the 19th instant, Mrs. ESTHER P. B. UPSHUR, wife of ARTHUR W. UPSHUR, Esq., Purser in the U. S. Navy, in the 23d year of her age.

At Mount Vernon Arsenal, Ala., on the 13th inst., JOHN CHARLES, only son of Capt. E. S. HAWKINS, U. S. Army, aged 1 year and 11 months.

In Charleston, Mass., on the 14th inst., FRANCIS DUPONT, son of Commander SAMUEL MERCER, U. S. Navy, aged 13 months.

Sept. ARRIVALS AT WASHINGTON.

21—Lieut. J. L. Donaldson, 1st arty., Fuller's.

Capt. J. R. Irwin, A. Q. M., Fuller's.

Capt. S. M. Plummer, A. Q. M., Fuller's.

Capt. F. Taylor, 1st arty., Lt. A. Taylor's.

23—Lieut. S. S. Fahnestock, 4th arty., Fuller's.

25—Capt. W. Wall, 3d arty., Gadsby's.

27—Lieut. S. G. French, 3d arty., Gadsby's.

28—Lieut. J. P. Johnstone, 4th arty., Fuller's.

QUARTERLY ARMY AND NAVY REGISTERS.—The Army Register will be issued in February, May, August and November, of each year; and will contain, besides the usual matter in the official Register, the stations of each officer, the head quarters of each regiment, the garrisons of every post and arsenal, the names of military storekeepers, chaplains and sutlers, a list of cadets at the military academy, and such other information as may appear useful or desirable.

[One reason for issuing the Army Register on the above named months, is, that the August number will contain the list of graduates of the year, and their assignment to corps or regiments.]

The Navy Register, to be issued in January, April, July and October, will contain the matter usually found in the official Register, with the addition of the names of officers at the several yards and stations, including the civil establishments, and on board our vessels of war.

The price will be to subscribers for the series, one dollar a year for each; single copies 37 1-2 cents. B. HOMANS.